

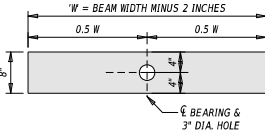
STEEL REINFORCED ELASTOMERIC BEARING NOTES:

1. PROVIDE ALL STEEL REINFORCED ELASTOMERIC BEARINGS IN ACCORDANCE WITH SECTION 623 - 'BEARING DEVICES' OF THE STANDARD SPECIFICATIONS.
2. (steel beams or steel girders only) ANCHOR BOLTS AND WASHERS SHALL BE UNPAINTED A709 GRADE 36 GALVANIZED STEEL. ALL NUTS SHALL BE UNPAINTED A307 GALVANIZED STEEL. SET NUTS 1/4" CLEAR OF SOLE PLATES AND BURR THREADS ABOVE AND BELOW NUTS.
3. (steel beams or steel girders only) USE SWEDGED ANCHOR BOLTS. BOLTS MAY BE CAST-IN-PLACE OR GROUTED IN PREFORMED (SLEEVED OR DRILLED) HOLES. SLEEVED HOLES SHALL BE CORRUGATED TO PREVENT SLIPPAGE. THE PREFORMED HOLES SHALL HAVE A DIAMETER OF 6". WHEN DRILLING HOLES, DO NOT COME INTO CONTACT WITH THE REINFORCING BARS.
4. (steel beams or steel girders only) SOLE PLATES SHALL BE AASHTO M270, GRADE 50 or 50W (ASTM A709, GRADE 50 or 50W) AND TO BE BEVELED TO MATCH GRADE WHEN GRADE EXCEEDS 1 PERCENT. STEEL SURFACES OF SOLE PLATES TO BE MACHINE FINISHED AS SHOWN IN THE DETAILS, MEASURED IN ACCORDANCE WITH ANSI B46.1.
5. (steel beams or steel girders only) SOLE PLATES SHALL MEET A FLATNESS REQUIREMENT OF 0.5 PERCENT IN THE DIRECTION BEING MEASURED (WIDTH, LENGTH, AND DIAGONALS) MAXIMUM, BUT NOT TO EXCEED 1/8".
6. BEARING SHALL BE PLACED NORMAL TO CENTERLINE OF BEAM.
7. (steel beams or steel girders only) FILL SLOTS AND HOLES AROUND ANCHOR BOLTS WITH AN APPROVED NON-HARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
8. (steel beams or steel girders only) FOR EXPANSION BEARINGS:
-USE (insert value 3/8" larger than bolt dia.)" x (min. 3" as per design) SLOTS IN SOLE PLATE AND 3/4" x 3" x (min. 5/2" as per design) WASHERS WITH (insert value 1/8" larger than bolt dia.)" DIA. HOLE IN WASHERS.

FOR FIXED BEARINGS
-USE (insert value 3/8" larger than bolt dia.)" DIA. HOLES IN SOLE PLATE AND 3/4" x 3" DIA. WASHERS WITH (insert value 1/8" larger than bolt dia.)" DIA. HOLE IN WASHER.
9. (typical for projects that have no need to secure against walking) STEEL REINFORCED ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF MASONRY PAD OR TOP OF CONCRETE PEDESTAL WITH AN APPROVED EPOXY ADHESIVE IN ACCORDANCE WITH SECTION 623.3.D.4 OF THE STANDARD SPECIFICATIONS IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED. ENSURE THE EPOXY ADHESIVE HAS SET PRIOR TO PLACEMENT OF BEAMS.
10. (modify as needed) PAYMENT FOR FABRICATION AND INSTALLATION OF STEEL REINFORCED ELASTOMERIC BEARINGS, ANCHOR BOLTS, NUTS, WASHERS, AND SOLE PLATES SHALL BE INCIDENTAL TO (insert appropriate beam item number).

ELASTOMERIC BEARING NOTES:

1. X TOTAL ELASTOMERIC BEARINGS REQUIRED.
2. ALL ELASTOMERIC BEARINGS SHALL BE 50 MIN. DUROMETER IN ACCORDANCE WITH REQUIREMENTS SPECIFIED IN SECTION 623 OF THE STANDARD SPECIFICATIONS.
3. ELASTOMERIC BEARINGS SHALL BE ATTACHED TO THE TOP OF ABUTMENT SEAT and/or TOP OF PIER CAP WITH AN APPROVED EPOXY ADHESIVE IN ACCORDANCE WITH SECTION 623.3.D.4 OF THE STANDARD SPECIFICATIONS IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED. ENSURE THE EPOXY ADHESIVE HAS SET PRIOR TO PLACEMENT OF BEAMS.
4. PAYMENT FOR FABRICATION AND INSTALLATION OF ELASTOMERIC BEARINGS SHALL BE INCIDENTAL TO (insert appropriate beam item number).

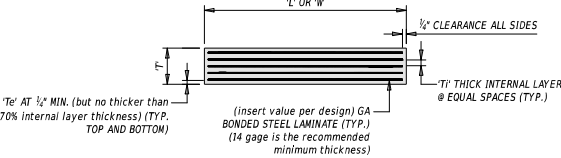


1" THICK 50 MIN. DUROMETER ELASTOMERIC BEARING DETAILS
(ADJACENT BEAMS ONLY)

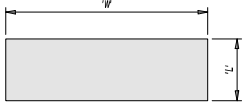
STEEL REINFORCED ELASTOMERIC BEARING SCHEDULE										
LOCATION	MARK	TYPE	BEARING DESIGNATION			CAPACITY PER PAD				
			NEOPRENE HARDNESS (SHORE A)	TOTAL NO. REED.	REACTION	MOVEMENT	LAMINATED ELASTOMERIC BEARING DIMENSION			
							'L'	'W'	LAYER THICKNESS 'T'	INTERIOR LAYERS
ABUTMENT A	EX #	EXP.	60± 5 DURO	--	---- KIP	----	---	---	---	---
PIER	FX #	FIX.	60± 5 DURO	--	---- KIP	N/A	---	---	---	---
ABUTMENT B	EX #	EXP.	60± 5 DURO	--	---- KIP	----	---	---	---	---

LEGEND:

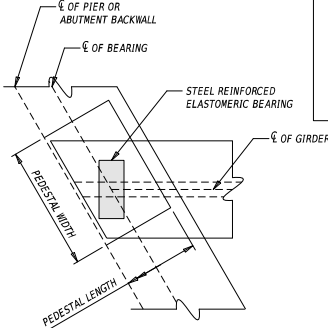
- ⊗ MAX. UN-FACTORED SERVICE 1 REACTION (W/O DYNAMIC LOAD ALLOWANCE).
- ⊠ TEMPERATURE MOVEMENT.



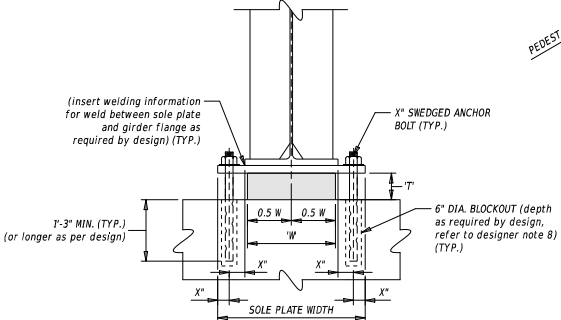
STEEL REINFORCED ELASTOMERIC BEARING ELEVATION



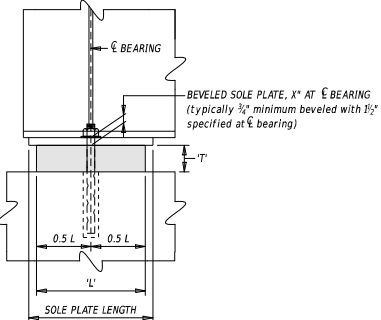
STEEL REINFORCED ELASTOMERIC BEARING PLAN



BEARING DETAIL
(PCEF CONCRETE GIRDER)



BEARING ELEVATION
(STEEL BEAM or STEEL GIRDER)



BEARING SIDE ELEVATION
(STEEL BEAM or STEEL GIRDER)

DESIGNER NOTES

1. REFER TO SECTION 106.10 FOR MORE INFORMATION ON DESIGN AND DETAILING OF STEEL-REINFORCED ELASTOMERIC BEARINGS AND ANCHORAGE TO STRUCTURE (SOLE PLATES, ANCHOR RODS, ETC.)
2. REFER TO SECTION 623 IN THE STANDARD SPECIFICATIONS, CHAPTER 18 OF CURRENT AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, AND CHAPTER 14 OF CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR MORE INFORMATION ON DESIGN AND FABRICATION OF ELASTOMERIC BEARINGS (BOTH STEEL REINFORCED AND UNREINFORCED).
3. ALL DETAILS, 'STEEL REINFORCED ELASTOMERIC BEARING NOTES', AND 'STEEL REINFORCED ELASTOMERIC BEARING SCHEDULE' WITH EXCEPTION OF THE FOLLOWING:
- 1" THICK 50 MIN. DUROMETER ELASTOMERIC BEARING DETAILS
- ELASTOMERIC BEARING NOTES
AS SHOWN ON THIS SHEET ARE INTENDED FOR SPREAD BEAMS, AND MUST BE SHOWN ON PLAN SHEETS. MODIFY DETAILS, SCHEDULE, AND NOTES ON THE PLAN SHEETS AS NECESSARY TO BE PROJECT-SPECIFIC.
4. FOR ADJACENT BEAMS, THE DESIGNER HAS THE OPTION TO USE 1" THICK 50 MIN. DUROMETER ELASTOMERIC BEARINGS WITH 8" LENGTH AND WIDTH EQUAL TO THE BEAM WIDTH MINUS 2" OR DESIGN A SMALLER (AREA-WISE) STEEL REINFORCED ELASTOMERIC BEARINGS. THE STANDARD PRACTICE IS TO USE THE FIRST OPTION (1" THICK 50 MIN. DUROMETER ELASTOMERIC BEARINGS). NOTE THAT 1" THICK ELASTOMERIC BEARINGS ARE UNREINFORCED, AND IF USED, SUCH DETAILS AND THE 'ELASTOMERIC BEARING NOTES' AS SHOWN ON THIS SHEET MUST BE INCLUDED IN PLAN SHEETS.
5. EXAMPLE USED FOR 'STEEL REINFORCED ELASTOMERIC BEARING SCHEDULE' ASSUMES A TWO SPAN BRIDGE WITH ONE FIXED BEARING LINE AT PIER.
6. THE ELASTOMER COMPOUND FOR BRIDGES IN DELAWARE ARE TYPICALLY CLASSIFIED AS BEING OF LOW TEMPERATURE GRADE 3, WHICH TRANSLATES TO HARDNESS (SHORE A) OF 60. USE OF ANY OTHER GRADES IS NOT RECOMMENDED, AND WILL NEED TO BE JUSTIFIED. A MINIMUM OF 50 DUROMETER IS ALLOWED FOR UNREINFORCED ELASTOMERIC BEARINGS FOR PROJECTS UTILIZING ADJACENT BEAMS.
7. THE DESIGNER SHALL EVALUATE THE NEED FOR PERMANENTLY SECURING BEARING PADS FROM 'WALKING'. THE DETAILS SHOWN ON THIS SHEET DO NOT INCLUDE THESE MEASURES, BUT IF USED, THESE DETAILS MUST BE INCLUDED IN PLAN SETS. REFER TO SECTION 106.10.9 FOR MORE INFORMATION.
8. FOR MORE INFORMATION ON ALLOWABLE ALTERNATIVE BLOCKOUT SIZES, REFER TO SECTIONS 106.10.9.2, 107.4.1.5.3, AND 107.5.3. NOTE THAT POTENTIAL ANCHOR RODS FOR MASONRY PLATES NOT SHOWN IN THIS DETAIL.
9. CONSIDER PROVIDING ADDITIONAL INFORMATION ON PLANS FOR MINIMUM DESIGN ROTATIONAL REQUIREMENTS IN ACCORDANCE WITH SECTION 106.10.12, NOTE 2.
10. FOR MORE INFORMATION ON SOLE PLATE TO STEEL GIRDER CONNECTION, REFER TO SECTION 106.10.9.1.



ISSUE DATE	
10/01/2015	
10/01/2017	
01/31/2019	